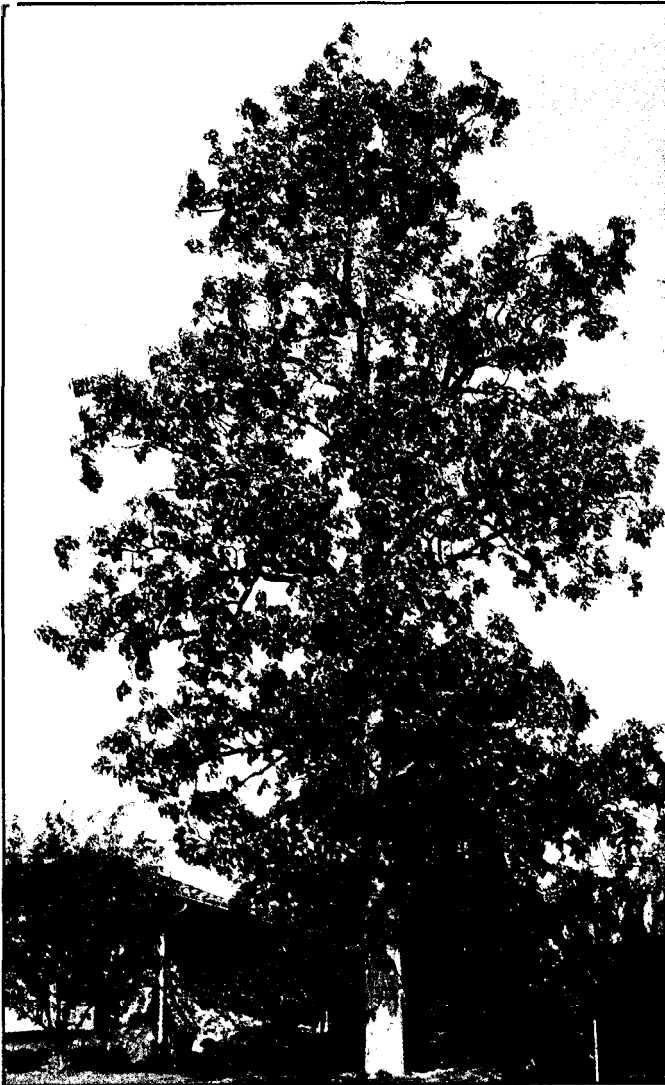


Tree Pruning

Proper pruning keeps trees shapely and healthy

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Shagbark Hickory

DO YOU REMEMBER the “trick” question asked by your high school botany teacher?

Question: “If a tree branch is five feet from the ground, and the tree grows six inches each year, how far from the ground will the branch be in five years?”

Answer: Five feet.

Reason: Branches on a tree don’t move up as the tree grows.

That question was often used by teachers as a prelude to the study of trees and how they grow. Today, teachers can use the same question, but what they teach about trees has changed.

That holds true for virtually everyone in the tree business. Questions about trees are constant from year to year, but the answers change. The answers change because our knowledge continues to grow through many years of research and trial and error.

For example, years ago we were taught that the tree root is very similar in size to the tree crown. Now we know that the tree roots do not penetrate much beyond

five feet in depth, while the branches may reach 80 or 90 feet in height. We also know that the tree roots can extend far beyond the reaches of the branches. And while the part of the tree that we view has a major single trunk, the tap roots in trees often die at a young age and are replaced by many lateral and supporting roots.

Many of us were fooled by the teacher’s question about the tree branch height because we have all seen trees with no branches close to the ground. But as we studied about tree growth, we learned that the low branches are lost, and the tree continues to grow and prosper. Although trees will lose branches naturally, we speed up the process and help the trees by pruning.

There are many good reasons for pruning branches from trees. For lumber uses, we try to improve the wood quality of the main trunk. We might also prune branches to eliminate crowding from other trees, or to reduce damage caused by insect and disease activity. We prune shade trees in yards and along streets to allow for better viewing, to increase flowering, to allow for traffic

flow, and to reduce interference with electrical wires or buildings. With a little skill and a lot of care, pruning of tree branches can be very beneficial to the tree.

How do we prune tree branches? Again, the question remains the same, but the answer has changed because of research.

A few years ago, branches were cut from trees by using what is called a "flush cut." That meant removing the branch and making a cut as close as possible to the main branch or the tree trunk. Branch stubs were not left, and the tree trunk or the main branches looked clear. Now, tree specialists say the flush cut must go!

When trees naturally lose live or dead branches, they do not suffer severe damage. The reason is that the tree's normal growth pattern and defense systems keep insects and diseases from entering the tree. The natural defense system in a tree resists rot, wood stain, formation of cavities and insect activity. However, this natural defense system within the trees can be damaged with improper pruning cuts.

The major point of the defense system on tree branches is at the point where the tree branch meets the trunk. As wood tissue is laid down for both the trunk and the branch, a branch collar is formed at the base of the branch. It is visible at the base of every branch, and appears as a raised area near the trunk.

In addition to forming a very strong union between the branch and the trunk, the branch collar defends the main trunk from insect and disease activity.

Pruning of branches should be done outside the branch collar. The cut should be made at a slight angle from top to bottom. This method requires more care while pruning, but results in a much healthier tree.

Years ago the only tools used for pruning branches were handsaws. Now, with electric saws and chainsaws, it is more difficult to make a precise cut. Yet care must still be taken to ensure cutting outside the branch collar.

It is easy to check on how good your pruning has been. After a branch has been pruned from a tree, callus tissue will form around the outside of the wound. This callus tissue will form during the first growing season following the cut. If the callus tissue forms in the shape of an oval or doughnut, the pruning cut was probably proper. If callus is forming on only the sides of the pruning wound, the cut was too close at the top or the bottom, and thus the branch collar was damaged.

Proper pruning allows for good growth of callus around the wound. Continuous growth of the callus closes the wound, and eventually new wood tissue and bark is laid down over the wound.

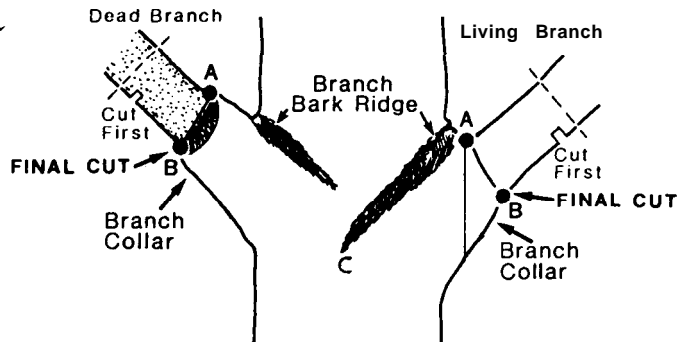
Although the tree is wounded, the natural growth of the tree keeps it in a good condition. Improper cutting cannot be corrected. Years ago, tree service



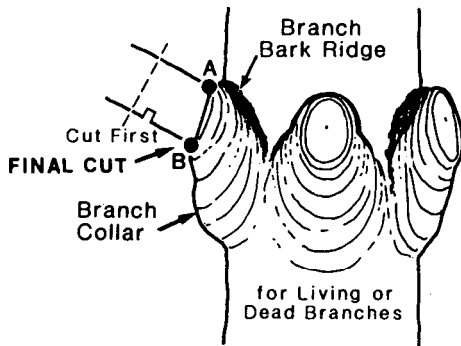
"Topping" a tree (upper left) leaves gaping holes where disease and insects can enter. Sprouts (left) grow from topped branches, but do little to improve the tree's appearance. Investing in a skilled pruning job (above) pays off with a healthier, more beautiful tree.

Tree Branch Pruning

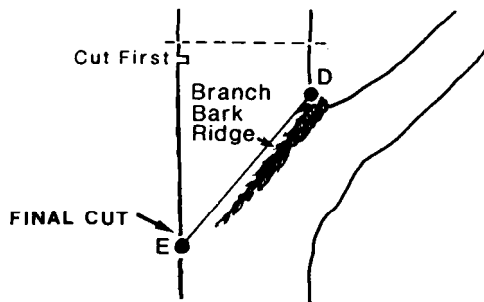
Hardwoods



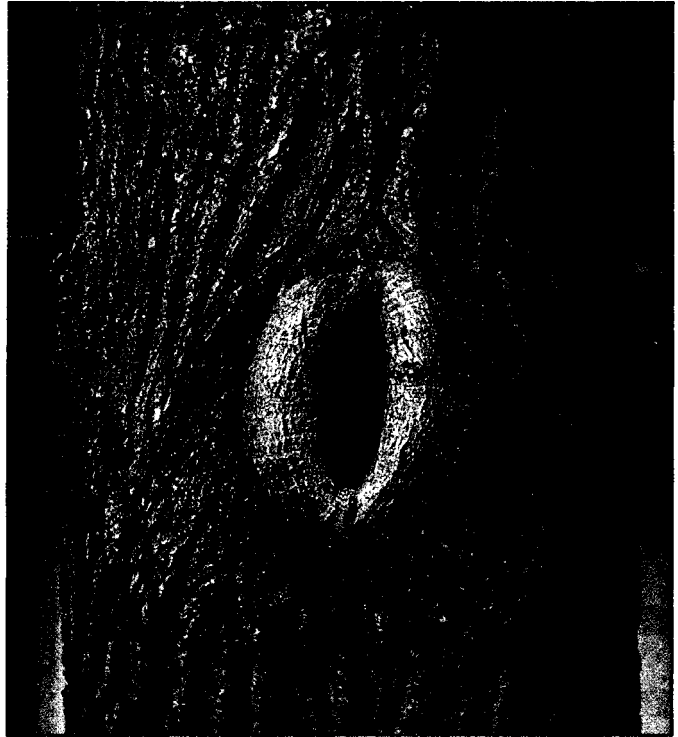
Conifers



Topping



Broken branches (**bottom photo**) should be carefully pruned to reduce damage to the main trunk. Callus forms around a proper pruning cut (below), to help close the wound to disease and insects.



people and homeowners used a tree wound dressing. We thought it would help the tree to heal. We now know that tree wound dressings are not necessary. The dressings do not stop insect or disease activity, and many times they don't even hide a poor cutting practice.

One activity that is commonly confused with pruning is tree topping. The tools and machines available for tree workers now make the practice very common, and often accepted by the tree owner.

The topping of the tree reduces the entire size of the tree to a certain height. That may look neat and clean, but it is one of the worst things to do to a tree, both visually and for the health of the tree. Topping cuts the branches beyond the point of union between the lateral and main branches. In effect, every branch is left with a stub.

The growth of callus around wounds, the tree's normal response to pruning, cannot adequately defend the many exposed stubs left by topping. Damaging insects and diseases have clear entry into the open ends of branches. Internal rot, once started, will often continue unchecked.

Some people mistakenly top trees to reduce damage from wind and ice. The cutting of the branches stimulates rapid, new growth from dormant buds. These new sprout branches are usually attached near the outer edges of the main branch so they lack a strong union with it. When winds and ice damage trees, these new sprout branches are usually the first to be damaged because they are weaker. Also, the main branches that have been hollowed by rotting organisms often break in a storm.

If the tree size needs to be reduced, it can be done using the proper pruning technique. That means dropping to a main fork or branch to make a pruning cut. The cut should still be made outside the branch collar, but overall the tree size will be reduced. There could be an increased expense involved in tree care, but it will result in healthier and longer-lasting trees.

The topping of trees causes other problems. A large portion of the tree's normal canopy has been removed, which reduces the growth potential for the tree. The loss of the branches allows for greater penetration of sunlight to the branches and trunk, which increases the heat and may retard growth. The large stubs left on the ends of branches are left vulnerable to insect and disease

attack because they are not as easily supplied with nutrients from the main tree.

Tree owners contemplating a pruning operation also need to be concerned about timing. Avoid pruning branches when the leaves are just starting to form in the spring. The tree's energy is being used for leaf and root production, leaving less energy and nutrients available for developing callus tissue.

The ideal time for pruning shade trees is during the dormant season, from late fall to late winter. Pruning in early spring might allow for more rapid sap flow from some trees, such as the maples, but if the pruning is done properly, normal plugging of sap flow will occur in a short time.

Learning to prune trees outside the branch collar is not difficult. When looking for commercial tree service companies to prune large trees, ask them about their pruning techniques. Specify that the trees must be pruned properly and ask to be sure they know what you mean. Try to be present when your trees are being pruned. Good looking, healthy trees add value to homesites and commercial property. Improperly pruned trees can be dangerous, and have an adverse effect on the property.

Trees are a valuable natural resource in forests and cities. Our use of trees might require changing the shape or size through pruning of branches. With proper pruning, we remove the branches, but we keep the trees healthy. The trees and their care are constant, but our methods need to change.

Sprout branches are weak and break easily under the weight of ice or strong winds.

